

**ENVIRONMENTAL ASSESSMENT FOR 3 BLM ALLOTMENTS
LOCATED IN THE UPPER RIO GRANDE WATERSHED
DOI-BLM-NM-F020-2009-0026-EA**

PURPOSE AND NEED

One of the major uses of public lands administered by the Bureau of Land Management (BLM) has traditionally been the grazing of cattle, sheep or horses for the benefit of individuals and communities throughout the western United States. This use is regulated by public land legislation, including the Taylor Grazing Act, the Endangered Species Act, the Federal Land Policy and Management Act, and the Public Rangelands Improvement Act. To ensure legislative compliance, the BLM needs to provide for livestock grazing in a manner that promotes healthy, sustainable rangeland ecosystems.

This document provides information necessary to determine whether, and under what conditions, the BLM should renew permits for cattle grazing on 3 allotments within the Upper Rio Grande watershed for an additional 10 years. The 3 allotments are being analyzed in one document in order to address the cumulative effects of proposed changes to the livestock grazing permits on the BLM parcels within the Upper Rio Grande watershed and to reduce the volume of paper involved in the public notification process. The allotments addressed in this Environmental Assessment include: #640 Guadalupe Mountain, #641 Common Use Area and #650 Sunshine Valley. Individual allotment maps are available at the Taos Field Office or can be obtained by visiting www.geocommunicator.gov.

CONFORMANCE WITH PLANS

The proposed permit renewals would be in conformance with the 1988 Taos Resource Management Plan (RMP), as amended. The RMP specifically states that adjustments may be made “by changing one or more of the following: the kind or class of livestock grazing on the allotment, the season of use, the Animal Unit Months (AUMs) authorized for grazing, and/or the pattern of grazing.” Livestock grazing impacts were analyzed on a Resource Area wide basis in the Taos Resource Management Plan. An Allotment Evaluation (AE) document has been prepared for each allotment and is available for review at the Taos Field Office.

SCOPE / IDENTIFICATION OF ISSUES

In January of 2008 a meeting was held with the BLM interdisciplinary team to inform them that these permits needed to be renewed, and this warranted a field visit to determine if standards and guidelines are being met in the subject allotments. Also, on March 10, 2008 a letter was sent to all interested publics to inform them that the subject allotments were being visited to assess standards and guidelines. Field evaluations were conducted on 8/10/2007 (#641), 9/4/2008 (#650) and 9/9/2008 (#640). After the field evaluations were completed and Allotment Evaluations were prepared, the interested public was given an opportunity to provide comments on evaluations from February 9, 2009 through February 27, 2009.

Based on these efforts, the following issues have been determined relevant to the analysis of this action and are addressed in the Affected Environment / Environmental Impacts section:

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|--|------------------------------------|----------------------------|
| • Air Quality | • Vegetation | • Cultural Resources |
| • Climate | • Noxious Weeds | • Social / Economic Issues |
| • Water Quality | • Wildlife | • Wild and Scenic Rivers |
| • Standards for Rangeland Health | • Threatened or Endangered Species | |
| • Areas of Critical Environmental Concern / Special Management Areas | | |

The following issues were considered but dismissed from analysis:

- **Recreation:** Allotment 640 is within the Wild Rivers Recreation Area but fencing restricts any livestock from entering the areas of the visitor's center, campgrounds and river bottoms.
- **Wilderness / Wilderness Study Areas:** None of these areas are found within the subject allotments.
- **Floodplains:** No floodplains are found within the subject allotments.
- **Wetlands / Riparian:** No wetlands or riparian areas are found within the subject allotments.
- **Hazardous of Solid Wastes:** There were no hazardous or solid wastes identified on the subject allotments.
- **Prime or Unique Farmland:** It has been determined by the Natural Resources Conservation Service (NRCS) that the Taos Field Office contains no prime or unique farmland.
- **Native American Religious Concerns:** There have been no areas of concern identified within the subject allotments. All tribes within the Field Office boundary will receive the opportunity to provide information on any areas of concern in or near the subject allotments.

PROPOSED ACTION AND ALTERNATIVES

Proposed Action:

Re-issue term grazing permits with a change of livestock in allotment 650 from horse to cattle, also changing the grazing dates and the grazing boundary to exclude private lands making the allotment solely BLM administered lands. One permittee grazes 68 head of cattle on allotments 640 and 641; in this action the dates are being changed to remove overlapping grazing dates and to change the season of use as outlined in Table 1. These changes would also suspend AUMs in both of the allotments. Allotment 640 would change from 145 active AUMs to 83, thus suspending 62 AUMs. In allotment 641 the said permittee's AUMs would change from 358 to 210 active AUMs, suspending 148 AUMs. For additional information, refer to Allotment Evaluation documents available for each allotment at the Taos BLM Field Office.

Table 1. Outline of allotment guidelines for permit renewal

Allotment Number	Livestock Type	Livestock Number	Season of Use	Total Federal Acres	Pastures	Grazing System	Proposed Improvements
640	Cattle	68	8/25 - 9/30	2,607	1	Rotational	Possible vegetation manipulation by fire, herbicide, or mechanical means **
641*	Cattle	50 30 68	5/01 - 6/29 5/01 - 6/29 5/15 - 8/24	5,602	1	Rotational	Possible vegetation manipulation by fire or mechanical means **
650	Cattle	22	10/01 - 10/22	240	1	Fall	N/A
Monitoring: BLM would continue the rangeland monitoring study program, continue to consult with the grazing permittee on placement of mineral and supplemental feed and continue monitoring for new populations of noxious weeds.							
* Allotment 641 has three authorized permittees.							
** These will be addressed in a subsequent NEPA document if and when funding is available.							

Alternative 1, No Action:

Re-issue term grazing permits as set forth in the previous Environmental Assessments as outlined in Table 2.

Table 2. Outline of allotment guidelines for permit renewal

Allotment Number	Livestock Type	Livestock Number	Season of Use	Total Federal Acres	Pastures	Grazing System	Proposed Improvements
640	Cattle	68	5/01 - 6/20	2,607	1	Spring	Possible vegetation manipulation by fire, herbicide, or mechanical means **

641*	Cattle	50	5/01 - 6/29	5,602	1	Unknown	Possible vegetation manipulation by fire or mechanical means **
		30	5/01 - 6/29				
		68	5/01 - 7/01				
		68	9/01 - 10/20				
650	Horse	22	11/1 - 11/30 3/1 - 4/21	240	1	Fall	N/A
Monitoring: BLM would continue the rangeland monitoring study program, continue to consult with the grazing permittee on placement of mineral and supplemental feed and continue monitoring for new populations of noxious weeds.							
* Allotment 641 has three authorized permittees.							
** These will be addressed in a subsequent NEPA document if and when funding is available.							

Alternative 2, No Grazing:

Do not issue grazing permits for these allotments, thereby suspending livestock grazing (No Action).

Location and Maps

640 - Located approximately 3 miles west of Questa, in Taos County, New Mexico. Elevation on this allotment is roughly between 6,300 and 6,800 feet. The allotment is located on the USGS Guadalupe Mountain Quadrangle 7.5 minute series topographic map. T. 29 N., R. 12 E. Sec 20, 21, 26-29, 34 and 35; T. 28 N., R. 12 E. Sec 2.

641 - Located approximately 7 miles northwest of Questa, in Taos County, New Mexico. Elevation on this allotment is roughly 7,500 to 9,200 feet. The allotment is located on the USGS Cerro de la Olla, Guadalupe Mountain, Sunshine and Tres Piedras NE Quadrangle 7.5 minute series topographic maps. T. 29 N., R. 11 E. Sec 1, 2 and 11-14 and T. 29 N., R. 12 E. Sec 6-9, 17 and 18.

650 - Located approximately 2 miles northwest of Cerro, in Taos County, New Mexico. Elevation on this allotment is roughly 7,500 feet. The allotment is located on the USGS Sunshine Quadrangle 7.5 minute series topographic map. T. 29 N., R. 12 E. Sec 4.

See Figure 1 for a map of the subject allotments.

AFFECTED ENVIRONMENT / ENVIRONMENTAL IMPACTS

Areas of Critical Environmental Concern / Special Management Areas

A small portion of allotment 641 is within the San Antonio Special Management Area (SMA). In accordance with the management prescriptions for these areas no increase in grazing preference is proposed in **any alternative**.

Air Quality

The Clean Air Act Amendments in 1990 required that all federal actions conform to State Implementation Plans for air quality. One non-attainment area has been designated in New Mexico. None of these areas are located on or near the allotment.

Although the subject allotments are not within a non-attainment area, greenhouse gas emissions from non-renewable sources often occur from ranching operations. Greenhouse gases (GHG), including carbon dioxide (CO₂) and methane (CH₄), and the potential effects of GHG emissions on climate, are not regulated by the EPA under the Clean Air Act. However, greenhouse gas emissions are linked to climate change.

Under the **proposed action** and **alternative 1**, GHG emissions are expected to be generated primarily from vehicles used to manage cattle operations and may be estimated to be about 10 tons of relevant emission. The BLM recommends using best management practices to reduce these emissions, such as reducing number of trips, keeping vehicles well maintained and purchasing more fuel efficient vehicles. There would be no effect under **alternative 2**.

Climate

The National Academy of Sciences (2006) has acknowledged that there are uncertainties regarding how climate change may affect different regions. Potential impacts to natural resources and plant and animal species due to climate change are also likely to be varied. In New Mexico, a recent study indicated that the mean annual temperatures have exceeded the global averages by nearly 50% since the 1970's (Enquist and Gori). Similar to trends in national data, increases in mean winter temperatures in the southwest have contributed to this rise. When compared to baseline information, periods between 1991 and 2005 show temperature increases in over 95% of the geographical area of New Mexico. In north central and northeastern New Mexico during the past 10 years (1998-2007) the temperature has been at or above average and precipitation has been fluctuating annually, but it is important to note that between 2000 and 2004 the 12 month running average for precipitation was below the annual average (based on the Northern Mountains Climate Division, New Mexico from the Western Regional Climate Center).

It is anticipated that monitoring efforts would help indicate vegetation shifts, allowing for management modifications to address global climate change.

Standards for Rangeland Health

Field crews completed the Rangeland Health Evaluation Summary Worksheet for all the subject allotments, with subdivision by parcel or distinct ecological site. Results are summarized in Table 3 by Soil/Site Stability, Hydrologic Function and Biotic Integrity and averages by site. In Table 3 each percent is a percent similar indicator score. The indicator score is created by multiplying an assigned value for departure from site descriptions/reference areas by the number of indicators at the level. Departure scores are categorized as: none to slight = 5, slight to moderate = 4, moderate = 3, moderate to extreme = 2 and extreme = 1, thus giving the most similar sites the highest score. For example, if all indicators under Soil/Site Stability were rated none to slight (5), the equation would be: (score) (nine indicators) / 45 X 100 = 100% similarity, or what is expected based on an Ecological Site Description.

Table 3. Summary of indicators by allotment displayed as a percent similar indicator score.

Allotment Number	Observers	Survey Date	Percent of Soil/Site Stability	Percent of Hydrologic Function	Percent of Biotic Integrity	Average percent
640	Young	9/09/2008	50%	50%	60%	53%
641	Lopez, Riehn, Williams, Young	8/10/2007	90%	88%	93%	90%
650	Young	9/04/2008	82%	78%	78%	79%

The Standards are a tool for assessing range condition and are not analyzed under **any alternative** here. If an allotment or pasture falls below 80% in the Soil Site Stability, Hydrologic, or Biotic indicators, monitoring should be established to determine the cause/s of the low rating. When the casual factor is determined to be livestock, grazing will be manipulated and/or range improvements will be implemented to improve conditions. The BLM, in consultation with the permittee and various other agencies, through an interdisciplinary effort, would develop goals and objectives for the areas that are falling below 80% to improve the condition.

Soils

The following soils are identified as occurring on the allotments analyzed in the watershed:

Fernando-Hernandez association, nearly level. The soil consists of loam and clay loams, with rooting depths over 60 inches. Parent materials of alluvium derived from mixed sources comprise this soil. Average annual precipitation ranges between 10 and 14 inches. Vegetation is characterized by western wheat, galleta, blue grama, winter fat, fourwing saltbush and sagebrush.

Orthents-Calciorthids association, very steep. This soil consists of gravelly clay loams, with rooting depths over 60 inches. Parent material of mixed alluvium comprises this soil. Average annual precipitation in this area ranges from 13 to 15 inches. Vegetation is characterized by pinyon, juniper, blue grama, and sideoats grama.

Petaca-Silva association, gently sloping. The soil consists of loams, with rooting depths between 20 to over 60 inches. Parent materials of weathered basalt and eolian materials comprise this soil. Average annual precipitation ranges between 10 and 14 inches. Vegetation is characterized by western wheat, blue grama and sagebrush.

Raton very stony silt loam, 3 to 8 percent slope. This soil consists of stony loams, with rooting depths up to 20 inches. Parent material of residuum from basalt on the top of old volcanic cones comprises this soil. Average annual precipitation in this area ranges from 14 to 16 inches. Vegetation is characterized by Arizona fescue, sideoats grama, mountain muhly, and oak.

Raton-Stunner association, moderately steep. These soils consist of stony/cobbly loams, with rooting depths between 20 to over 60 inches. Parent material of gravelly and cobbly material weathered from basalt and eolian sediment comprises this soil. Average annual precipitation in this area ranges from 14 to 16 inches. Vegetation is characterized by squirreltail, western wheat, blue grama, sagebrush and winter fat.

Rock outcrop-Raton complex, moderately steep. These soils consist of stony silt loams, with rooting depths up to 20 inches. Parent material of basalt residuum and mixed eolian sediment comprise these soils. Average annual precipitation in this complex ranges from 14 to 16 inches. Vegetation is characterized by pinyon, juniper, muttongrass, Arizona fescue and western wheat.

Stunner-Luhon association, gently sloping. These soils consist of loams, with rooting depths over 60 inches. Parent material of mixed alluvium and eolian sediment comprises this soil. Average annual precipitation in this area ranges from 10 to 12 inches. Vegetation is characterized by western wheat, blue grama, threeawn and rabbitbrush.

Under current management, soil indicators for the allotments point to good soil condition with exception of allotment 640. This allotment had the lowest Soil and Site Stability rating, 50% (see the 'Standards for Rangeland Health' portion and Table 3). This lower rating has been attributed to influences of historic grazing coupled with the lack of fire and subsequent sagebrush dominance.

The **proposed action**, due to the reduction of the grazing season and a later starting date, would help to improve rangeland conditions resulting in less bare ground and lower chances of soil compaction. This conclusion is based on the site assessment showing some indicators of surface erosion as a factor to reduce soil stability. Based on current knowledge and current management practices, the **proposed action** and **alternative 1** will result in no increases in impacts, but will not reduce impacts. The **alternative 2** would remove livestock from the area and eliminate both the positive and negative impacts of livestock.

Water Quality

Surface – These allotments are located in Hydrologic Unit Code (HUC) 13020101, or the Upper Rio Grande Watershed, which comprise 1,979,220 acres along the Rio Grande and its tributaries and is further divided into smaller HUCs. The allotments analyzed in this document occur in two of these smaller HUCs (Table 4).

Table 4. Summary of BLM allotments by 10 Digit HUC (subwatershed and NMED assessment unit).

NMED Assessment Unit	Subwatershed	Allotments	BLM Acreage	Percent of Subwatershed
NM-2219_05	Red River – Rio Grande	640, 641, 650	7,244	5.3%
NM-2119_10	Red River	640	1,064	0.9%

The New Mexico Environment Department (NMED) surveyed and evaluated perennial reaches in the Upper Rio Grande watershed in 2006 and identified impairments for stream reaches not meeting water quality standards for designated uses. The following impairments are identified for these units:

NM-2119_05, Rio Grande (Red River to CO border) – Includes 7,244 acres of BLM land in allotments 640, 641 and 650. This reach was assessed in 2006 as not supporting coldwater fishery use. Probable causes were water temperature and pH with probable sources including removal of riparian vegetation, recreation and tourism Activities (other than boating), hydromodification and habitat modification. BLM staff notes that impairments occurring in the Rio Grande near these allotments are not due to BLM grazing management. Impairments appear to be due primarily to water management and water delivery from Colorado.

NM-2119_10, Red River (Rio Grande to Placer Creek) – Includes 1,064 acres of BLM land in allotment 640. This reach was assessed in 2006 as not supporting coldwater fishery use. Probable cause was aluminum, ambient bioassays and sediment bioassay, with probable sources including resource extraction, natural sources, mine tailings, mill tailings, highway maintenance and runoff and abandoned mining.

Based on Rangeland Health Evaluation surveys, there may be increased water quality impairments resulting from the **alternative 1**. The **proposed action**, due to the reduction of the grazing season and a later starting date, would help to improve rangeland conditions resulting in less runoff and improved water quality. This conclusion is based on the site assessment showing some indicators of surface erosion as a factor to reduce water quality. Allotment 640 had the lowest ratings for Soil/Site Stability and Hydrologic Function, 50% and 50% respectively. It was identified that the most likely reason contributing to reduced similarity in allotment 640 was the influence of historic grazing coupled with the lack of fire and subsequent dominance of sagebrush. **Alternative 2** may or may not reduce probable sources of impairment.

Subsurface water – Current impairments are not identified and ground water is not likely to be impacted by the proposed cattle. Therefore, based on current knowledge, there would be no impact from **any alternative**.

Wild and Scenic Rivers

A small portion of allotments 640 and 641 are within the Rio Grande Wild and Scenic River boundary. Allotment 640 also contains a small portion of the Red Wild and Scenic River In accordance with the Rio Grande Corridor Plan, no livestock grazing is permitted within the river corridors; consequently there would be no effect in **any alternative**.

Vegetation

Vegetation expected for the soils identified in the allotments include: western wheat, needle and thread, black sagebrush, Indian ricegrass, blue grama, fringe sage, winter fat, black grama, ring muhly, Galleta, broom snakeweed, oneseed juniper, Arizona fescue, blue grama, mountain muhly, sedge, twoneedle pinyon, sideoats

grama, sand dropseed, threeawn, Bigelow's rubber rabbitbrush, spike dropseed, muttongrass, New Mexico feathergrass, little bluestem, fourwing saltbush, sagebrush, oak, mountain mahogany, eriogonum, and other species in smaller amounts.

Grazing may impact vegetation under adverse climate conditions or under poor grazing management. Other impacts to vegetation have been the lack of natural disturbance, such as fire. It has been determined that the current grazing systems within the subject allotments are not adversely affecting the vegetation. The lowest biotic integrity rating for the subject allotments was 60% similarity to the Ecological Site Description (See section 'Standards for Rangeland Health and Table 3). The low rating was in Allotment 640 due to lack of natural disturbance and historic grazing. Residual impacts of livestock grazing would be reduced under the **proposed action** due to the reduction in grazing season and a later starting date. **Alternative 1** would not change the residual impacts due to the moderate removal of current year's growth on forage species. Therefore, under the **proposed action** and **alternative 1**, no additional impacts to vegetation are expected. Under the **alternative 2**, there would be no measurable vegetative removal from the allotment.

Noxious Weeds

Any time livestock are grazed in other areas and then returned to the allotment or fed non-certified feed there is a risk of introducing exotic or noxious plant species to the allotment. The **proposed action** would not pose additional risks of introduction or spread of noxious weeds beyond those already occurring. Under **all alternatives** weeds could be introduced by road maintenance equipment or recreational activities.

Under the **proposed action** and **alternative 1**, weeds could be introduced to the allotment through livestock feces, emergency feed, watering equipment or vehicles associated with the management of livestock. **Alternative 2** would limit the risk of new infestation to those caused by human activities and wildlife.

Cultural Resources

Allotment 641 has one recorded archaeological site within its boundaries, a lithic scatter with some basalt rock structures that probably represent hunting blinds. The site dates to the Late Archaic through the Pueblo III Periods (1800 BC - AD 1300). Allotment 640 does not have any sites recorded but there are multiple sites within 1 mile of the allotment boundary, which may indicate the possible presence of artifacts within the allotment.

In this watershed a reconnaissance inventory was carried out in 1999 where some of the subject allotments were visited by archaeologists, and the other allotments only were visited by an interdisciplinary team. It was determined that the area of the subject allotments was most likely used for hunting, gathering and periodic camping.

Under the **proposed action** grazing intensity would be reduced slightly, and under **alternative 1** grazing would remain at current levels. Based upon a literature, site and survey files review and the reconnaissance inventory, no direct impacts have been observed to potential cultural resources from current grazing activities. Natural erosion due to ground disturbance could damage sites; these effects may be slightly less under **alternative 2** than the **proposed action** and **alternative 1**.

Wildlife

The allotments are located in the Intermountain Basins Big Sagebrush Shrubland and Rocky Mountain Montane Mixed Conifer Forest and Woodland, key wildlife habitat types as identified in the Comprehensive Wildlife Conservation Strategy of the New Mexico Department of Game and Fish (2005). Existing habitat within the allotments include woodland and savanna vegetation (Dick-Peddie 1993), and supports seasonal home ranges for elk, mule deer, pronghorn, black bear, mountain lion, coyote, prairie dog, badger, black-tailed jackrabbit,

desert cottontail, gopher, mice, bats, raptors, turkey vulture, American kestrel, common nighthawk, broad-tailed hummingbird, common raven, horned lark, rock wren, reptiles, amphibians and a variety of insects. The region is an important refuge for many species of wildlife.

Judicious grazing practices can have positive effects on wildlife and can be a beneficial management tool, including increases in vegetation composition diversity and improvement of forage availability and quality for early to mid-successional wildlife species; creation of patchy habitat with high structural diversity for feeding, nesting and hiding; opening up areas of dense vegetation to improve foraging areas for a variety of wildlife; removing rank, coarse grass that would encourage regrowth and improve abundance of high quality forage for wild ungulates; stimulating browse production by reducing grass biomass; and improving nutritional quality of browse by stimulating plant regrowth (NMDGF 2005).

Studies in northern New Mexico have indicated that total elimination of grazing did not improve range condition on upland or lowland sites when compared with adjacent moderately grazed areas (Holecheck and Stephenson 1985). Smith et al. (1996) found that lightly grazed climax rangelands and conservatively grazed late seral rangelands had similar songbird and total bird populations. They also concluded that wildlife diversity was higher on the conservatively grazed late seral than the lightly grazed climax rangeland. Studies in southeastern Arizona by Bock et al. (1984) support the hypothesis that conservatively to moderately grazed areas in mid or late seral condition supported greater diversity of wildlife than ungrazed areas in climax condition. Livestock grazing was also shown to enhance forage for elk and manage their distribution by increasing availability and nutritional value of preferred grasses in early growth stages (Holechek et al. 2004).

Best management practices would ensure that forage production within this area can support wildlife and livestock on a sustained basis. The functionality assessment of habitat components is outlined in Table 4.

Table 4. Functionality assessment for Biotic Fauna.

Allotment	Biotic Fauna Rating	Summary
640	Functioning at Risk-Downward Trend	Historic grazing and a lack of natural disturbance
641	Proper Functioning Condition	N/A
650	Functioning at Risk-Upward Trend	N/A

The **proposed action** could improve range conditions for wildlife species due to a higher level of range management, while **alternative 1** would not have a notable adverse impact on wildlife. The **no grazing alternative** would remove all possible competition between wildlife and livestock.

Threatened or Endangered Species

Federally listed threatened (T) and endangered (E) species in Taos county include: black-footed ferret (*Mustela nigripes*) (E); Southwestern willow flycatcher (*Empidonax traillii extimus*) (E); and Mexican spotted owl (*Strix occidentalis lucida*) (T). It is determined that there are no federally listed threatened or endangered species likely to be found in the subject allotments. There is a sub-species (montane) of the Gunnison's prairie dog (*Cynomys gunnisoni*), listed as a federal Candidate species, that could occur on the allotments. There is no designated critical habitat for any species listed by the U.S. Fish and Wildlife Service (USFWS) within the allotments. There are two state-listed threatened species which may be found in the area, the Bald eagle (*Haliaeetus leucocephalus*), during winter months, and the American marten (*Martes americana origenes*) has been observed in the higher elevation mixed-conifer forest on Guadalupe Mountain. It is determined that the **proposed action** and **either alternative** will have no affect on federally listed threatened or endangered species, and no adverse affect to any federal candidate or state-listed threatened species.

Migratory bird species of conservation concern that have the potential to occur on the allotments include bald

eagle, golden eagle, prairie falcon, Ferruginous hawk, western burrowing owl, Brewer's sparrow, juniper titmouse, loggerhead shrike, mountain bluebird, black-throated gray warbler, pinon jay, sage sparrow, and mourning dove. The **proposed action** and **alternative 1** has the potential to have a negative effect upon individual birds, eggs, young and/or the nesting habitat of ground nesting birds; however, there would be no noticeable impact to the population or to the species as a whole. **Alternative 2** could have either a beneficial or detrimental effect on individual migratory bird species of concern, depending on the response of range condition and individual species requirements, but affects at the population or species level would not be adverse.

Social / Economic Issues

BLM permits/leases are transferred to qualified applicants at the request of the current permittee/lessee; the BLM has had no influence on the social characterization of those who currently hold these permits. Therefore, it has been determined that neither the **proposed action** nor **either alternative** would be likely to result in impacts which would occur disproportionately in low-income groups, minorities or Indian tribes. With regard to economics, the **proposed action** and **alternative 1** would allow the permittee to continue the lifestyle they have known and earn money from cattle operations on federal lands. Suspension of the grazing permit under **alternative 2** would cause monetary losses to the permittee/lessee, in the form of increased costs to rent additional pasture or in purchasing feed.

Cumulative Impacts

Cumulative Actions

Livestock grazing is only one of several disturbance activities within the area. Other possible cumulative actions in conjunction with livestock grazing on BLM administered lands include: off-road vehicles use, other recreational use and road construction and maintenance.

Cumulative Effects

Based on current management the land health standards are not all being met. The upland sites standards that are not being met in some of the subject allotments are contributed to historic grazing coupled with sagebrush dominance. Current livestock grazing is not directly contributing to the standards not being met; therefore there would be no measurable cumulative impacts from the **proposed action** or **either alternative**. Also, BLM land comprises only a small portion of the watershed, roughly 17.5% of the area within the Upper Rio Grande watershed and the subject allotments cover only roughly 0.4% of the total land mass of this watershed (percentages are relative to lands within Taos Field Office).

Consultation and Coordination

This Environmental Assessment has been mailed to all individuals or organizations who have notified the Taos Field Office of their interest. These individuals or organizations are given 15 days to make comments on the accuracy of this document.

Preparers

This document was prepared and reviewed by a team from the Taos Field Office. They include:

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Lora Yonemoto - Realty Specialist
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References

- Bock, C.E., J.H. Bock, W.R. Kenny, and V.M. Hawthorne. 1984. Response of birds, rodents, and vegetation to livestock exclosure in a semidesert grassland site. *Journal of Range Management* 37: 239-242.
- Chaney, E., W. Elmore, W.S. Platts. 1993. *Managing Change: Livestock Grazing on Western Riparian Areas*. Northwest Resource Information Center, Eagle, Idaho. Produced for the U.S. Environmental Protection Agency. 31 pp.
- Dick-Peddie, William A. 1993. *New Mexico Vegetation: Past, Present, and Future*. University of New Mexico Press, Albuquerque, NM.
- EPA Inventory of US Greenhouse Gas Emissions and Sinks: 1990-2006. Environmental Protection Agency, Washington, D.C.
- EPA, Natural Gas Star Program (2006 data) at: <http://www.epa.gov/gasstar/accomplish.htm>. Environmental Protection Agency, Washington, D.C.
- Enquist, Carolyn and Gori, Dave. Implications of Recent Climate Change on Conservation Priorities in New Mexico. April 2008.
- Holechek, J.L. and T. Stephenson. 1985. Comparison of big sagebrush vegetation in north central New Mexico under moderately grazed and grazing excluded conditions. *Journal of Range Management* 36: 455-456.
- Holechek, J.L., T.T. Baker, and J.C. Boren. 2004. Impacts of controlled grazing versus grazing exclusion on rangeland ecosystems: what we have learned. New Mexico State University Cooperative Extension Service, Range Improvement Task Force Report 57. Las Cruces, New Mexico. 42 pp.
- Intergovernmental Panel on Climate Change (IPCC). 2007. *Climate Change 2007: The Physical Basis (Summary for Policymakers)*. Cambridge University Press. Cambridge, England and New York, New York. (Available on the Internet: <http://www.ipcc.ch/pdf/assessment-report/ar4/wg1/ar4-wg1-spm.pdf>)
- Intergovernmental Panel on Climate Change (IPCC). *Climate Change 2007, Synthesis Report. A Report of the Intergovernmental Panel on Climate Change*.
- National Academy of Sciences. 2006. *Understanding and Responding to Climate Change: Highlights of National Academies Reports*. Division on Earth and Life Studies. National Academy of Sciences. Washington, D.C. (Available on the Internet: <http://dels.nas.edu/basc/Climate-HIGH.pdf>.)
- New Mexico Department of Game and Fish. 2005. *Comprehensive Wildlife Conservation Strategy for New Mexico*. New Mexico Department of Game and Fish. Santa Fe, New Mexico. 526 pp + appendices.
- Smith, G., J.L. Holechek, and M. Cardenas. 1996. Wildlife numbers on excellent and good condition Chihuahuan Desert rangelands: an observation. *Journal of Range Management* 49: 489-493.
- Soil Conservation Service Soil Survey of Taos County and parts of Rio Arriba and Mora Counties, New Mexico, 1982.
- Water Quality and Water Pollution Control in New Mexico, State of NM Water Quality Control Commission, 2002.

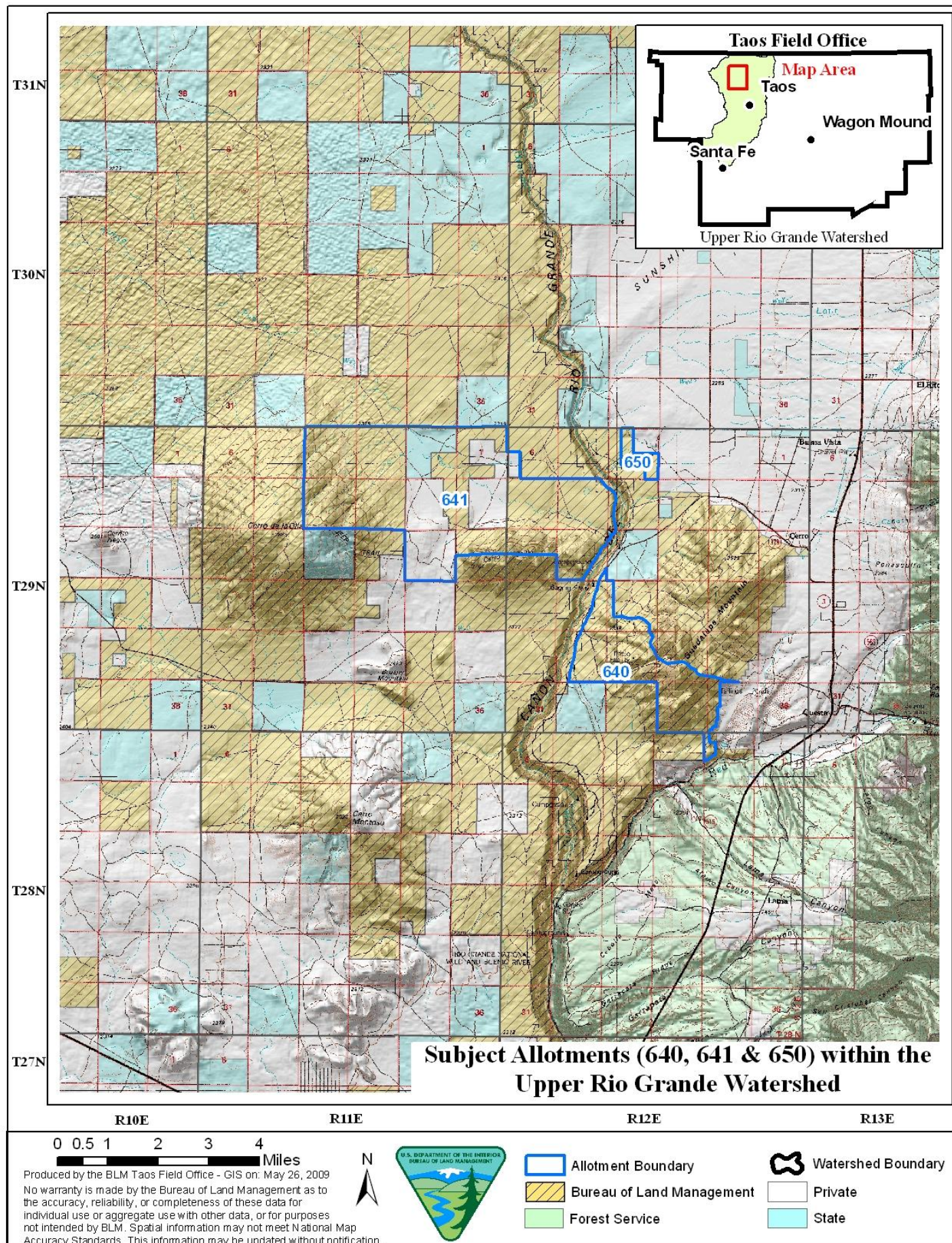


Figure 1. Map of subject allotments